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**THE HIDDEN BIAS OF THE VIENNA CONVENTION
ON THE LAW OF TREATIES**

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03-20

**LAW AND ECONOMICS
WORKING PAPER SERIES**

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THE HIDDEN BIAS OF THE VIENNA CONVENTION ON THE LAW OF TREATIES

Abstract: The process of treaty formation and reservations to multilateral treaties, enshrined in Articles 19-21 of the Vienna Convention on the Law of Treaties, establishes the principle that reservations are reciprocal. The treaty will be in force between a reserving state and a non-reserving state as amended by the reservation. Therefore if a state wants to exempt itself from a treaty obligation, it must let other nations escape that same burden. This paper presents an economic model of treaty formation and considers the effect of reciprocity on treaty ratifications among heterogeneous states. The economic model further reveals a hidden bias of the Vienna Convention. In spite of the apparent neutrality of the reciprocity principle governing the effect of reservations, the Vienna Convention creates a systematic disadvantage for states that have a comparative advantage in cooperation.

JEL Codes: K10, K33, D70

Keywords: Treaties, Reservations, Ratification, Accession, Vienna Convention.

The regime governing treaty accession, ratification and reservations -- introduced by the 1969 Vienna Convention -- represents a change in preexisting international law. Prior to the Vienna convention, unilateral reservations introduced by states at the time of accession or ratification had to be accepted by all signatory states in order to become effective. To help facilitate multilateral agreements coming into force when signatory states introduce reservations at the time of accession or ratification, the Vienna Convention originated a more liberal approach to treaty reservations. The Vienna Convention applies the concept of reciprocity to resolve the inherent tension between flexibility and integrity in the process of treaty accession and ratification. The resulting regime allows states to introduce unilateral reservations under most circumstances and governs the relations between reserving and non-reserving states through a mechanism of reciprocity. If a state introduces a reservation, the treaty relationship between that state and any other non-reserving state is modified according to the scope of the reservation. The exception or limitation claimed by the reserving state applies to the non-reserving state to an equal extent.¹

As pointed out in previous literature, the reciprocal effects of unilateral reservations introduced by the Vienna Convention create a valuable constraint against strategic state

¹ The precise language of Article 21 of the Vienna Convention on the Law of Treaties is as follows: 1. A reservation established with regard to another party in accordance with articles 19, 20 and 23: (a) modifies for the reserving State in its relations with that other party the provisions of the treaty to which the reservation relates to the extent of the reservation; and (b) modifies these provisions to the same extent for that other party in its relations with the reserving State.

reservations (Parisi, 1998; Parisi and Ghei, 2002; Parisi and Sevchenko, 2002).² This paper evaluates the effect of such reciprocity when heterogeneous states are involved. In spite of the apparent neutrality of the reciprocity principle, the analysis reveals a hidden bias of the Vienna Convention, which creates a strategic advantage for economically disadvantaged states. These findings shed light on the troubled evolution of Article 21 of the Vienna Convention, and explain why less developed nations favored the reciprocity principle adopted by the Vienna Convention.

Section 1 of this paper discusses the rules governing the process of treaty reservation and the change brought about by the Vienna Convention on the Law of Treaties. Section 2 presents an economic model of treaty reservations to reveal the systematic advantage of less-advantaged states under Article 21 of the Vienna Convention. Section 3 concludes by identifying the latent bias created by Vienna Convention's principles governing treaty reservations.

1. Reservations under the Vienna Convention of the Law of Treaties

The Vienna Convention on the Law of Treaties provides the fundamental framework that governs modern treaty-making.³ The Vienna Convention for the most part codifies preexisting customary practice governing the formation, entry into force, and interpretation of treaties, as well as the procedural rules for treaty administration.⁴ However, on the specific issue of treaty reservations, the Vienna Convention introduces a new regime which substantially innovates preexisting international customary law.

1.1 Reservations to a Treaty under Prior Customary International Law

A fundamental premise of international law is that a state cannot be bound to a treaty rule without its consent. The traditional unanimity rule implies that the text of a multilateral treaty has

² In spite of the relatively liberal approach to reservations in the Vienna Convention, the number of reservations appended to multilateral treaties is relatively low. The prevailing literature suggests that the limited use of reservations in the process of treaty ratification may follow because states, on balance, value the integrity of the treaty more than their ability to tailor the agreement to their individual needs through the use of reservations. Parisi (1998) and Parisi and Sevchenko (2002) suggest that the reciprocity mechanism of Article 21 (1) plays an important role in limiting the number of reservations.

³ The Vienna Convention on the Law of Treaties concluded May 23, 1969 and entered into force Jan. 27, 1980, culminating an effort which began in 1949. Vienna Convention on the Law of Treaties, 1155 U.N.T.S.

⁴ The Vienna Convention itself represents a combination of codification of customary international law and creation of new legal norms through progressive development, although the line between the two is not necessarily clear.

to be adopted by unanimity. This ensures that no state participating in treaty negotiations can become bound by any treaty or part of a treaty that it finds unacceptable. Until the late nineteenth century, this consent principle was strictly applied to the process of treaty accession and ratification.⁵ Unanimous consent for the admissibility of treaty reservations was regarded as the logical corollary of the unanimous consent requirement for treaty formation.⁶ The application of the unanimity principle to treaty reservations was explicitly supported by the idea that the terms of a multilateral treaty are freely negotiated and agreed upon, and no state should be allowed to frustrate the purpose of the international agreement through unilateral action. In this way, it was argued, unanimity would be preserved, and any treaty coming into force had the clear backing of all its constituent parties, laying a strong foundation on which compliance could be built.

The strict application of the unanimity rule, however, gradually started to lose support in the post World War I era. As pointed out in Parisi and Sevchenko (2002), under this regime, if a state had difficulties with the ratification of a particular treaty provision, it had the limited choice of accepting the treaty as a whole or not being a party to the entire agreement. The leading European nations continued to support the traditional strict application of the rule that a state cannot attach a reservation to a treaty unless all parties agree to it. Other nations, however, began to recognize that the unanimity principle for treaty reservations risked becoming unworkable in a world characterized by broader participation of international actors, such as that which followed the First World War and the establishment of the League of Nations. Multilateral agreements involved an increasingly large number of nations, with a resulting increase in the difficulties and costs of treaty negotiation. This brought about the need to find flexible rules that could facilitate multilateral agreements becoming effective even in the face of reservations in the ratification of treaties by signatory states.⁷

⁵ Malkin (1926, pp. 141-162) provides numerous examples of how the unanimity principle developed through the practice of states in the formation and ratification of international treaties, with reference to the International Sanitary Conventions held in Venice in 1892, Dresden in 1893, and Paris in 1894. Sinclair (1984, p. 55) provides an additional example of strict application of the unanimity principle in various pre-World War I treaties, as shown by the opposition to unilateral reservations in the Hague Peace Conference of 1899.

⁶ The traditional rules governing the case of unilateral reservation closely followed the principles of private contract law adopted by most legal systems. Under such principles, a state reservation to a treaty was construed as a unilateral amendment of the original agreement which could only be effective against other parties with their consent.

⁷ An important event that opened the door to the modern formulation of Article 21 is India's 1959 request for accession to the Inter-Governmental Maritime Organization, which it had originally submitted in 1948. The Secretary General wanted to apply the unanimity rule. Documentation is available at GAOR, 14th session, annexes, a.i. 65 (1959). Position of India is described in A/4188 and that of the Secretary General in A/4235. The debate

There was no easy solution to the problem of reservations to international treaties. While it was recognized that some leeway for reservation was necessary, the question was left open on how to limit its scope. The ability to introduce unilateral reservations without requiring consent from other states would unfairly tip the balance in favor of reserving states. In turn, this would trigger a strategic and frequent use of reservations, which would undermine the stability of treaty agreements. On the other hand, the very existence of a treaty agreement should not be discouraged by excessively strict rules on reservations. International rules on treaty formation should foster treaty preservation and avoid situations where a minor disagreement over some technical provision undermines the treaty as a whole.

1.2 *The Origins of Article 21 of the Vienna Convention*

One of the most difficult issues to resolve during negotiations of the Vienna Convention was finding an appropriate balance between flexibility and stability in treaty formation. The Vienna Convention, while remaining faithful to the general principle of *pacta sunt servanda* (agreements must be kept), departed from the unanimity principle as it applied to treaty reservations.⁸ The new regime introduced by the Vienna Convention was designed as a practical alternative to more rigid rules established by customary international law. The argument for a more liberal attitude with respect to treaty reservations rested on the fact that most reservations would not incorporate substantive changes to treaties, but would be triggered by incompatibilities of procedural or jurisdictional provisions of the treaty with constitutional or administrative rules of the signatory states. Allowing reservations in such cases would allow states to participate in certain multilateral treaties where they otherwise would not.

The Vienna Convention addressed the issue of unilateral reservations by moving away from the previous unanimity principle and identifying a viable resolution, appealing to the concept of

revealing the different positions of states on the issue of reservations is available at A/4311 paras 5-24. India's specific case was resolved in the General Assembly's Resolution 1452 (XVI) by labeling the Indian addendum to its ratification a "policy declaration," thereby avoiding a clash with the unanimity rule. According to Rosenne, "the 1959 debate in the General Assembly is important for its strong reaffirmation that there was to be no return to the absolute unanimity practice in any guise," although there was no further movement forward until the Waldock Commission of 1962.

⁸ For a more extensive description of the development of the regime of treaty reservations from the 19th century to the adoption of the Vienna Convention on Treaties, see Sinclair (1984) and Rosenne (1989).

reciprocity - a basic and universally accepted principle of international law.⁹ This effectively balanced the conflicting needs for flexibility and integrity that had surfaced during the previous reservations regime.¹⁰

The Vienna Convention articles concerning reservations (Articles 19-23) represent an innovation in preexisting international customary law.¹¹ The Vienna Convention defines a reservation as “a unilateral statement, however phrased or named, made by a State when signing, ratifying, accepting, approving or acceding to a treaty, whereby it purports to exclude or to modify the legal effect of certain provisions of the treaty in their application to that State.” Article 19 allows states to include reservations in their acceptance of treaty obligations, unless the treaty itself expressly forbids reservations, or the reservation is incompatible with the object and purpose of the treaty. Article 20 outlines the circumstances under which reservations must be accepted by the other parties; if a state does not object to a reservation from another state within a set amount of time, its silence is construed as tacit acceptance. An objection to a reservation does not, however, preclude the entry into force of the treaty between the two states. Rather, Article 21 allows states to tailor relations between them through the mechanism of reciprocity. The treaty relations between two states are modified according to the scope of the reservation, and the limitation imposed by the reserving state applies to both parties to an equal extent.¹²

The reciprocal effects of unilateral reservations present a valuable protection against the risk of strategic reservations. Unilateral reservations under Article 21 become a “double-edged sword,” as other parties to the treaty are also exempt from treaty obligations to the extent of the reservation. Given the reciprocal effects of reservations against the reserving state and the applicability of the original treaty obligation between non-reserving states in their relations with

⁹ Reciprocity is a universally accepted principle of international law that makes diplomatic relations possible. Reciprocity is the foundation of diplomatic immunity, the laws of war, and a mechanism for dealing with breaches of treaty provisions. For a general analysis of reciprocity in international law, see Parisi and Ghei (2002).

¹⁰ The difficulty of finding a viable solution to this issue is evidenced by the debate and work that preceded the Vienna Convention.

¹¹ The Vienna Convention provisions on treaty reservations are a result of progressive development, rather than codification, as revealed by the troubled history of the rules governing reservations and the gradual move away from unanimous acceptance of reservations as the ICJ articulated in the Genocide Convention. For further historical analysis, see Parisi and Sevchenko (2002).

¹² However, if a state objects to the reservation, the entire provision (i.e., the specific article of the treaty) does not apply between the two parties. The objecting state may also declare the entire treaty not in force between the two countries.

one another, Article 21 often leads a multilateral treaty obligation into a network of fragmented bilateral treaty obligations.

1.3 Treaty Reservations under the Vienna Convention

Treaty formation under the Vienna Convention allows states who ratify¹³ or accede¹⁴ to a treaty to introduce reservations on specific provisions via unilateral statements. With a reservation, a state excludes itself from certain terms of the treaty or varies the legal effect of such terms. The treaty, as modified by the reservation, enters into force between the reserving state and states that do not object to the reservation. This bilateral effect does not alter the relationship between the reserving state and other states of the convention who do not accept the reservation.¹⁵

Although not explicitly provided for in the Vienna Convention, the mechanism of treaty reservation should also consider the possibility that more than one state may introduce reservations to the treaty. When several states introduce reservations to the same treaty provision, the effects of the states' reservations should be distinguished as follows: (i) reserving states are bound to the treaty as modified by their respective reservations in their relations with non-reserving states; (ii) reserving states are bound to the treaty as modified by the greater of the reservations in their relations with one another; and (iii) non-reserving states are bound by the original treaty in their relations with one another.

When reservations are introduced in the process of treaty accession or ratification, Article 21 transforms the original treaty agreement into a network of bilateral sub-treaties. The following analysis reveals that, in spite of the apparent neutrality of the reciprocity principle governing reservations, the Vienna Convention creates a systematic advantage in favor of high-cost or low-benefit states and a corresponding disadvantage to low-cost or high-benefit states.

¹³ Under Article 14 of the Vienna Convention, a treaty subject to ratification does not become binding until after it is approved by the legislature.

¹⁴ Under Article 15 accession is the means by which a state becomes a party to an existing treaty to which it is not an original signatory.

¹⁵ Reservation can omit or modify treaty provisions. Neither the reserving state nor the non-reserving states are bound by omitted provisions. Non-reserving states remain bound to the original treaty provision in their relations with one another, but not in their relations with the reserving state. Similarly, modified provisions apply to all bilateral relations of the reserving state with the non-reserving state, while the original treaty provision remains applicable in the relations among non-reserving states.

2. Treaty Reservations among Heterogeneous States

As discussed in the previous Section, under Articles 19-21 of the Vienna Convention, a reservation may fragment a multilateral treaty into a network of bilateral sub-treaties. When a state introduces a reservation to a treaty at the time of accession or ratification, the treaty enters into force between the reserving state and non-reserving states, as modified by the reservation. This bilateral effect of unilateral reservations does not prejudice application of the original treaty provisions between non-reserving states in their relations with one another.

The multiplicity of bilateral effects created by unilateral reservations to a treaty makes it necessary to first study how reservations affect the interactions between two states. Later we will use these results in a multilateral context, allowing more than one state to introduce reservations.¹⁶

Bilateral Interaction Between States H and L

To study the bilateral effects of unilateral reservations, consider two representative states H and L . Each state benefits from the other state's acceptance and ratification of the treaty, and incurs costs when ratifying the treaty and undertaking obligations toward the other state. Although the Vienna Convention applies to both accession and ratification of treaties, we refer to the ratification choice as a strategy variable and denote it as s . When ratifying, states can accept treaty obligations in full or introduce limitations in the form of unilateral reservations. Higher levels of s imply greater willingness of the state to ratify and undertake treaty obligations. A reservation creates a discrepancy between the original treaty obligation and the ratified treaty obligation. A larger reservation implies a lower level of ratification of the treaty. The level of ratification strategy extended from state H to state L is denoted by s_H and the level of ratification strategy extended from state L to state H is denoted by s_L .

¹⁶ The multilateral problem facing an individual state can be viewed as the aggregation of multiple bilateral problems faced by the state. Thus, the bilateral problem discussed currently is the typical problem confronting a representative state in a multilateral treaty relationship.

The benefit enjoyed by state H from s_L , the ratification level of the treaty by state L , is $b_H s_L$.¹⁷ The cost incurred by state H for its chosen level of ratification s_H is $a_H s_H^2$. The payoff for state H from entering into a treaty relationship with state L is then given by $P_H^L = b_H s_L - a_H s_H^2$.¹⁸ We assume that $b_H > a_H$ so that some positive level of treaty ratification is preferred to no treaty ratification at all. Likewise, the payoff for state L when entering into a treaty relationship with state H is $P_L^H = b_L s_H - a_L s_L^2$ where $b_L > a_L$.

For now, assume that state H chooses a level of ratification expecting unconditional reciprocity from state L through the treaty. This would be the case for a state that expects the other state to ratify the treaty at the same level. That is, state H expects $s_L = s_H$. Confronted with the problem of maximizing $b_H s_H - a_H s_H^2$, state H chooses ratification level $s'_H = b_H / 2a_H$. Likewise, assuming state H reciprocates the level of ratification chosen by state L , state L chooses $s'_L = b_L / 2a_L$ to maximize $b_L s_L - a_L s_L^2$. For future reference, we restate the optimal levels of ratification under unconditional reciprocity for the two countries in the following:

$$s'_H = b_H / 2a_H \quad \text{and} \quad s'_L = b_L / 2a_L \quad ((a))$$

If states were allowed to introduce unilateral reservations without the reciprocity effect created by Article 21, they could choose any ratification level lower than the existing treaty obligation, without facing the reciprocal effects of their reservation. Each state is tempted to reduce the level of treaty ratification and take advantage of the other state's compliance with higher levels of treaty obligations. The resulting level of ratification for state H is $s_H = 0$ since $s_H = 0$ maximizes $P_H^L = b_H s_L - a_H s_H^2$ given any s_L . Likewise, the level of ratification for state L is $s_L = 0$ given any s_H . Thus, without the constraint imposed by Article 21, the Nash equilibrium is $(s_H = 0, s_L = 0)$. This constitutes a prisoner's dilemma since it would benefit both states to settle on a positive level of treaty ratification.

Having explained the ratification strategies under unconditional reciprocity and under no reciprocity, it is now possible to study the workings of Article 21 of the Vienna Convention. The reservation mechanism set forth by the Vienna Convention has two important characteristics. One is reservation itself - reservation means that a state may ratify or accede to a treaty while

¹⁷ This model is adopted from the asymmetric nonlinear model developed in Fon and Parisi (2003a).

¹⁸ The subscript refers to the state. The superscript L seems redundant here but this notation makes it easier to generalize our result in the future where each state interacts with more than one state.

choosing a level of obligation lower than that specified in the original treaty. The second is that reservations have reciprocal effects under Article 21. Given the ratification choice of one state, the second state realizes that any higher ratification level would not bind the first state. On the other hand, if the second state ratifies a lower level than the first state, then the second state's choice determines the mutually binding treaty obligations under reciprocity.

Let s_T represent a multilateral treaty obligation agreed upon by a group of signatory states. First consider two representative states. Assuming $s_L \leq s_T$, the problem confronting state H 's interactions with state L , given the reciprocal effects of any introduced reservation, is the following.

$$\max_{s_H} \pi_H^L = \begin{cases} b_H s_H - a_H s_H^2 & \text{if } s_H \leq s_L \\ b_H s_L - a_H s_L^2 & \text{if } s_H \geq s_L \end{cases} \text{ given } s_L \leq s_T \quad ((b))$$

Recall that the optimal level of treaty ratification with unconditional reciprocity s'_H given in ((a)) maximizes the first branch as well as the second branch of the payoff function π_H^L in ((b)). Suppose that state L chooses a level of ratification s_L that is less than the privately optimal level of ratification s'_H for state H . Then in spite of the fact that state H desires a higher level of mutual treaty obligation, the best it can do is take advantage of the reciprocal effects of the other state's reservation and invoke the same level of reservation in its relationship with state L .¹⁹ If instead state L chooses a level of ratification s_L greater than the privately optimal level of ratification s'_H for state H , then state H is better off choosing s'_H and will not agree to a ratification level higher than s'_H .²⁰

Hence, given the ratification level s_L and reciprocity induced by Article 21, the reaction function of state H can be written as follows:

$$s_H = \begin{cases} s_L & \text{if } s_L \leq s'_H, s_L \leq s_T \\ s'_H & \text{if } s'_H \leq s_L, s_L \leq s_T \end{cases} \quad ((c))$$

Likewise, assuming $s_H \leq s_T$ and given the ratification level s_H , the reaction function of state L under reciprocal reservation is given in the following:

¹⁹ State H finds that the second branch in (1)a)i)(1)(b) is better.

²⁰ State H finds that the first branch in (1)a)i)(1)(b) is better.

$$s_L = \begin{cases} s_H & \text{if } s_H \leq s'_L, s_H \leq s_T \\ s'_L & \text{if } s'_L \leq s_H, s_H \leq s_T \end{cases} \quad ((d))$$

Further assume that state H is the high-cost state, facing a higher cost-benefit ratio than the low-cost state L , that is, $a_H/b_H > a_L/b_L$. Alternatively, high-cost state H has a lower benefit-cost ratio than low-cost state L : $b_H/a_H < b_L/a_L$. Given that state H is a relatively higher cost state, the optimal levels of ratification under unconditional reciprocity for the two states satisfy $s'_H < s'_L$. The high cost state's choice with unconditional reciprocity is always lower than the low cost state's choice.

Before studying the equilibrium level of ratification, it is convenient to introduce additional terminology. If a state's optimal level of ratification under unconditional reciprocity exceeds the level of obligation under the original treaty, the state has no reason or opportunity to introduce a reservation. Such a state is a non-reserving state. On the other hand, if the state's optimal level of ratification under unconditional reciprocity is less than the treaty level of obligation, the state is reluctant to ratify the treaty in full and chooses to introduce a reservation. In this case, the country becomes a reserving state. Recall that with unconditional reciprocity the high-cost state H always selects a lower ratification level than the low-cost state L . This means that for any currently specified treaty obligation, state H is more likely to be the reserving state. More specifically, given any treaty obligation s_T , if $s'_H < s_T \leq s'_L$, then state H is a reserving state and state L is a non-reserving state. Meanwhile, if $s'_H < s'_L < s_T$, then both are reserving states. If $s_T \leq s'_H < s'_L$, then H and L are both non-reserving states.

Treaty Ratifications in a Bilateral Equilibrium

We now investigate equilibrium levels of treaty ratification under the reciprocity regime dictated by Article 21 of the Vienna Convention. We assume that within the range of mutually agreeable levels of treaty ratification, each state realizes that higher levels of mutual obligation are better than lower levels and chooses accordingly. Thus, if there are multiple mutually acceptable equilibria under reciprocity, the highest level of mutual ratification will be chosen. Depending on the relative magnitudes of s'_H , s'_L , and the content of the original treaty obligation

s_T , each state might make reservations or ratify the treaty in full. We thus consider the following three alternative cases.

Case i: Bilateral reservations. As indicated earlier, bilateral reservations could happen if the two states prefer lower levels of obligation than that specified in the original multilateral treaty ($s'_H < s'_L < s_T$). The relative magnitudes of the states' ratifications and the original treaty obligation are represented in Figure 1, which shows the reaction functions of the two states. In particular, according to the reaction function specified in ((c), whenever s_L is less than s'_H (and thus also less than s_T), state H takes advantage of the reciprocity rule set forth in Article 21 of the Vienna Convention and invokes state L 's reservation in its relationship with state L : $s_H = s_L$. Hence, in this region, the reaction function of state H follows the 45-degree line. Whenever s_L is greater than s'_H but less than s_T , state H chooses s'_H instead. In this region, the reaction function of state H becomes horizontal. The reaction function of state H is shown as the darker dotted curve. Likewise, the reaction function of state L from ((d) is shown by the solid curve in Figure 1. Note that both reaction functions stop at the level specified in the treaty s_T . With these reaction functions, s'_H is the highest level of ratification mutually agreeable to the states. This is the equilibrium ratification level for the two states.

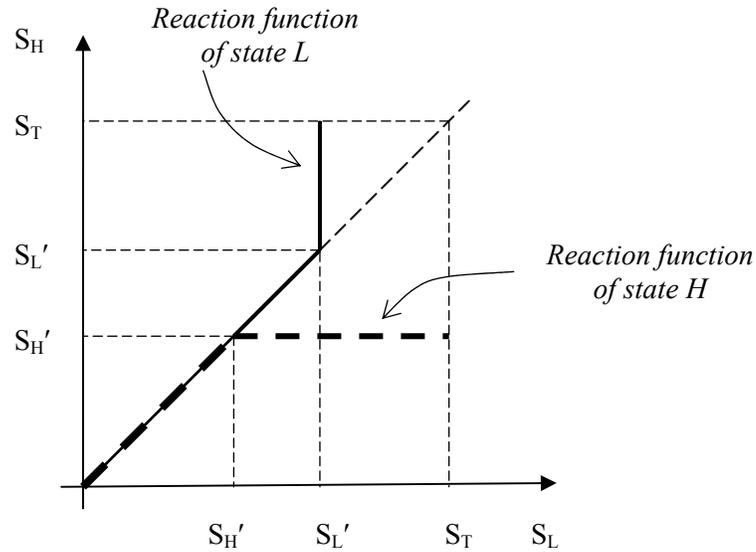


Figure 1:
Bilateral Reservation Strategies
Equilibrium ratification: s_H'

Case ii: Unilateral reservation. A unilateral reservation takes place when one state prefers a level of obligation lower than the treaty specification, while the other state is content with the treaty as originally formulated. In our framework, this occurs when state H becomes a reserving state while state L is a non-reserving state: $s_H' < s_T < s_L'$. The reaction functions for the two states are shown in Figure 2A. The reaction function for state H is similar to that in case i . The reaction function for state L no longer has a kink because the second branch of the reaction function specified in ((d) is vacuous for state L . With these reaction functions, it is readily seen that the equilibrium ratification level for both states is again s_H' .

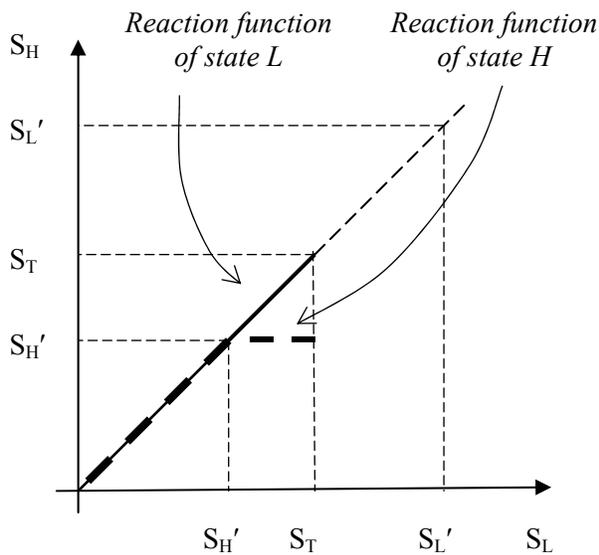


Figure 2A:
Unilateral Reservation Strategy
 Equilibrium ratification: s_H'

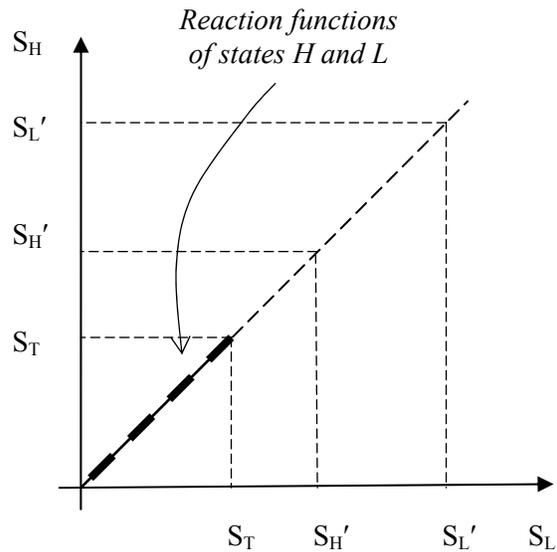


Figure 2B:
No-Reservation Strategies
 Equilibrium ratification: s_T

Case iii: No reservation. Whenever $s_T < s_H' < s_L'$, both states are non-reserving states. Figure 2B shows the reaction functions for both states. In this case, both states ratify the treaty in full and the equilibrium level of ratification for both states is consistent with the original treaty obligation s_T .

Welfare Effects of Bilateral Reciprocity under Article 21

We now examine the effects of the reservation process introduced by Article 21 of the Vienna Convention on the two representative states considered in the previous analysis. We investigate the effects in each of the scenarios considered above, following the same order of presentation.

Case A. Bilateral reservations: H and L are both reserving states. As observed before, whenever the original treaty specifies a high obligation such that $s'_H < s'_L < s_T$, both states introduce reservations to the treaty and reach a level of mutual ratification s'_H . Since s'_H maximizes the payoff function for state H under unconditional reciprocity, state H is better off after the ratification process than under any other level of treaty obligation. It is not clear whether state L is better off or worse off after ratification. Recall that s'_L maximizes the payoff function under unconditional reciprocity for state L . The relationships $s'_H < s'_L < s_T$ imply that s'_H falls on the left hand side of the maximum and s_T falls on the right hand side of the maximum of the payoff function. Thus, the move from the original treaty obligation s_T to the lower ratification level chosen by the other state can either improve or worsen state L 's welfare. Thus, when both states introduce reservations, the high cost state is always better off, but the welfare change for the low cost state is indeterminate.

Case B. Unilateral reservation: H is a reserving state and L is a non-reserving state. The original treaty obligation falls between the privately optimal treaty levels for the two states, $s'_H < s_T \leq s'_L$. Here the high cost state introduces a reservation. The low cost state has no incentive to introduce a reservation, but can at least invoke the reciprocal effects of the high cost state's reservation against such state.²¹ In this bilateral sub-treaty relationship, the equilibrium ratification s'_H is determined by the high cost state. As in the last case, the high cost state H is better off after the ratification process, since it achieves its first best treaty level under reciprocity. Unlike in the previous case, the low cost state L is worse off because the equilibrium ratification s'_H is further from the optimal level of state L than the level of obligation s_T specified in the treaty. Thus, when there is a unilateral reservation, the welfare of the reserving state is always improved while the welfare of the non-reserving state is worsened.

Case C. No reservation: H and L are both non-reserving states. The treaty obligation is lower than the private optimal levels for the relevant states, $s_T \leq s'_H < s'_L$, so that neither state has an incentive to introduce a reservation even though both have an option to do so. Both states

²¹ In this context, the non-reserving state obtains a lower treaty level than its ideal level, but avoids the costs of full treaty compliance in the face of the other state's partial ratification.

ratify the treaty in full in equilibrium. When no reservations are introduced by either state, welfare does not change after the ratification process.

The Multilateral Setting

So far we have considered the bilateral relationship of representative states H and L which are party to a multilateral treaty. We are now ready to consider the multilateral effects of treaty ratification under Article 21 of the Vienna Convention. Consider the case of N participating states. Each state benefits from other states' acceptance and ratification of a treaty obligation, and incurs cost by agreeing to fulfill the treaty obligations by ratifying the treaty. When a uniform treaty obligation crumbles into a network of bilateral treaty obligations, the overall benefit of a participating state is determined by the sum of the benefits derived from each sub-treaty relationship in which it participates. The payoff for state i , P_i , is the sum of all P_i^j where P_i^j is the payoff derived by state i from interacting with state j in the bilateral sub-treaty relationship. The payoff function P_i^j is similar to those introduced previously. Let the level of treaty ratification of state j as it affects state i be denoted by s_{ji} and the level of treaty ratification of state i as it affects state j be denoted by s_{ij} .²² The benefit enjoyed by state i from the level of ratification by state j is $b_i s_{ji}$, and the cost incurred by state i for its level of treaty ratification with state j is $a_i s_{ij}^2$. The net payoff for state i from the treaty relationship with state j , P_i^j , is $b_i s_{ji} - a_i s_{ij}^2$ where $b_i > a_i$. Thus, the total payoff for state i from participating in the multilateral treaty is given by the summation of the bilateral payoffs from the various sub-treaty relationships and is given by:

$$P_i = \sum_{\substack{j=1 \\ j \neq i}}^N P_i^j = \sum_{\substack{j=1 \\ j \neq i}}^N (b_i s_{ji} - a_i s_{ij}^2) \quad ((e))$$

²² Double subscripts are necessary in the general case since each state has to confront bilaterally with many states. These other states are not necessarily passive in the face of a unilateral reservation and may choose reservations of their own with different levels of treaty ratification. Hence, the state in question may have many different levels of bilateral obligations under Article 21. Thus there is a need to differentiate the levels of obligation of each state against any other specific signatory state. The order of subscripts for the strategy variable is also relevant.

As before, the optimal level of mutual ratification for state i in its relationship with any other state, say state j , could be found by maximizing the payoff assuming unconditional reciprocity $b_i s_{ij} - a_i s_{ij}^2$. To maximize this payoff, state i would choose $s'_i = b_i/2a_i$. This is the optimal level of ratification under unconditional reciprocity for state i .

The N states participating in the formation and ratification of the treaty are ranked from 1 to N such that state 1 is the highest cost state, and state N is the lowest cost state.²³

$$\frac{a_1}{b_1} > \frac{a_2}{b_2} > \dots > \frac{a_N}{b_N}, \text{ or, } s'_1 < s'_2 < \dots < s'_N \quad ((f))$$

In the process of bargaining for a mutually acceptable treaty level, it is likely that the states would agree to an intermediate level of treaty obligation. This is true because states are expected to bargain until the sum of their payoffs under reciprocity is maximized. The aggregate payoff function for all signatory states is maximized when states undertake a level of treaty obligation s_T falling between the privately optimal levels of ratification for the states at both ends of the cost distribution: state 1 and state N .²⁴ In other words, there exists a state M between 1 and N such that the treaty obligation s_T satisfies:

$$s'_M = \frac{b_M}{2a_M} < s_T < \frac{b_{M+1}}{2a_{M+1}} = s'_{M+1}. \quad ((g))$$

Recall that if the optimal level of ratification under unconditional reciprocity is greater than or equal to the original treaty obligation s_T , the state would be a non-reserving state. Thus, all states from $M+1$ to N are non-reserving states. On the other hand, states 1 through M have incentives to introduce reservations to the treaty. To study the reciprocal reservation mechanism provided in Article 21 of the Vienna Convention in this multilateral context, we consider three separate cases.

²³ For convenience we assume strict inequality for ranking the cost-benefit ratios. The results can be modified if weak inequalities are involved.

²⁴ As an extremely simplified example, take the payoff functions for state H and L discussed earlier. The aggregate payoff function under reciprocity is $b_H s - a_H s^2 + b_L s - a_L s^2$. The level of treaty obligation that maximizes this payoff is $s_T = (b_H + b_L)/2(a_H + a_L)$. It can be proved that s_T is greater than $b_H/2a_H$ and less than $b_L/2a_L$. For other details, see the discussion on reciprocal social optimum in Fon and Parisi (2003b).

Non-reserving States

The first group of cases includes situations where state i is a non-reserving state. Here the following are true: $i \geq M + 1$ and $s'_i = \frac{b_i}{2a_i} > s_T$. The content of the treaty relationship between a non-reserving state i and another state j depends on whether j is itself a reserving or non-reserving state. If j is a non-reserving state ($j \geq M + 1$), the bilateral sub-treaty relationship between the two states is characterized by full ratification (s_T) since neither state has an incentive to introduce a reservation.²⁵ Thus, the opportunity to introduce unilateral reservations made possible by Article 21 of the Vienna Convention has no impact on the welfare of state i when going through the process of ratification with another non-reserving state.

On the other hand, when i is a non-reserving state and j is a reserving state ($j \leq M$), then state j must be higher cost compared to state i . The unilateral reservation introduced by state j leads to an equilibrium level of treaty ratification s'_j .²⁶ The welfare of state i , the non-reserving low-cost state, is negatively affected by the possibility offered by Article 21 of the Vienna Convention to introduce unilateral reservations.

Recall that the total payoff for state i from the multilateral treaty is given by the summation of the various bilateral payoffs with all other signatory states, as in ((e)). The equilibrium payoff for state i after the ratification process under Article 21 should therefore be separated into two parts. One part represents payoffs obtained from interacting with reserving states (1 to M), and the second part is given by payoffs from interacting with other non-reserving states ($M + 1$ to N). The equilibrium payoff for state i is given by the following.

$$P_i = \sum_{j=1}^M (b_i s'_j - a_i s_j'^2) + \sum_{\substack{j=M+1 \\ j \neq i}}^N (b_i s_T - a_i s_T^2)$$

[i a non-reserving state, $i \geq M + 1$] ((h))

²⁵ This is discussed in case C above.

²⁶ This is discussed in case B above. In this specific case where i is the non-reserving state, i plays the role of L and j plays the role of H .

The equilibrium payoff in ((h) shows that state i suffers an insufficient level of ratification in M cases, but receives the full treaty payoff in the remaining $N - M - 1$ bilateral sub-treaty relationships.

Reserving States

In the second group of cases, state i is a reserving state and the following conditions must hold: $i \leq M$ and $s'_i = \frac{b_i}{2a_i} < s_T$. As before, the interaction of a reserving state i with another state depends on whether the latter is a reserving or non-reserving state. If j is a non-reserving state, state i in this case is a high cost state compared to state j , where $j \in \{M + 1, \dots, N\}$. The mutual level of treaty ratification is determined by the high-cost state i 's ratification at level s'_i . The welfare of state i , the reserving state, is improved by the opportunity to introduce unilateral reservations under Article 21 of the Vienna Convention.²⁷

When state i interacts with another reserving state, the resulting equilibrium level of ratification depends on whether state i is high cost or low cost relative to state j .²⁸ Since all states are ranked in decreasing order in terms of relative cost, state i is relatively high cost in comparison to state j , when such a state falls in the range $j = i + 1, \dots, M$. The equilibrium level of ratification s'_i in these cases is determined by the high cost state i . Here, the welfare of state i , the reserving state, is also improved by the opportunity to introduce reservations against other reserving, and yet lower cost, states.

Different results are obtained when state i is a lower cost state relative to the other reserving states, 1 through $i - 1$. In spite of the common use of reservations, each bilateral sub-treaty relationship is characterized by an equilibrium level of ratification s'_j which is determined by the relatively high cost state j , where $j \in \{1, \dots, i - 1\}$. In each of these interactions with relatively high cost states, the changes in welfare for the low cost state i are indeterminate under

²⁷ This is discussed in case B above. In this specific case where i is the reserving state, state i plays the role of H and j plays the role of L .

²⁸ This is discussed in case A above.

the process of reservation and ratification set forth by Article 21. This result reflects the indeterminacy already observed in case *A* above.

As before, the equilibrium payoff for state *i* following various reservations under Article 21 should be separated into two parts. One part is given by payoffs from interacting with other reserving and relatively high cost states (1 to *i*−1). The second part is given by payoffs from interacting with other reserving and relatively low cost states (*i*+1 to *M*) or non-reserving states (*M*+1 to *N*). The equilibrium payoff for state *i* is given by the following.

$$P_i = \sum_{j=1}^{i-1} (b_i s'_j - a_i s_j'^2) + \sum_{j=i+1}^N (b_i s'_i - a_i s_i'^2)$$

[*i* a reserving state, $i \leq M$] ((i))

The equilibrium payoff in ((i)) shows that state *i* suffers an insufficient level of ratification in *i*−1 cases but obtains its optimal payoff in the remaining *N*−*i* bilateral sub-treaty relationships.

Comparing the payoff for a non-reserving state in ((h)) with the payoff for a reserving state in ((i)), we see that the reserving state is faced with undesired reservations from fewer states than the non-reserving state since there are fewer terms in the first summation in ((i)) than in the first summation in ((h)). Meanwhile in the remaining bilateral relations, the reserving state controls the level of treaty obligations in a larger number of cases, while the non-reserving state is constrained by the level of the treaty s_T and obtains the full treaty payoff in fewer cases. This means that the process of treaty reservations set forth by Article 21 gives an advantage to reserving states over non-reserving states.

State 1 (the highest cost state)

Given our criterion for ranking states, state 1 is the highest cost state. Given a treaty obligation s_T , the highest cost state would be a reserving state. The possibility for state 1 to introduce unilateral reservations under Article 21 of the Vienna Convention implies that this state's reservation would affect the levels of treaty ratification in its relationship with all other states. Thus the highest cost state's welfare is improved by the opportunity to introduce reservations in every bilateral sub-treaty interaction. As a special case of the equilibrium payoff formulated for the general case of a reserving state, the first term in equation ((i)) disappears since

no other reserving state has a higher cost than state 1. Consequently, the equilibrium payoff for state 1 with reciprocal effects of reservations is the following.

$$P_1 = \sum_{j=2}^N (b_1 s_1' - a_1 s_1'^2) \quad ((j))$$

The equilibrium payoff in ((j)) shows that state i obtains its optimal payoff in all $N - 1$ sub-treaty relationships, and never suffers excessive treaty reservations by other states.

Comparing the payoff for the highest-cost state in ((j)) with the payoff for the representative reserving state in ((i)), we see that the highest-cost state never faces undesired reservations from other states. This can be seen from the fact that the first summation in ((i)) disappears in ((j)). The highest-cost state effectively controls the level of ratification so that its optimal treaty level prevails in all bilateral treaty relations with other states. This shows that treaty reservations set forth by Article 21 not only give an advantage to reserving states over non-reserving states, but also give an increasing advantage to states that prefer lower levels of international treaty obligations.

3. Conclusions: The Advantage of the Most Disadvantaged States

This analysis has unveiled an interesting effect of the process of treaty accession and ratification introduced by the Vienna Convention on the Law of Treaties. Behind the apparent neutrality of the reciprocity principle, we identify a systematic bias in the effects of reservations under Article 21. Article 21 creates a systematic advantage for states that have a comparative disadvantage in treaty implementation. Given the greater opportunity to introduce reservations, Article 21 tilts the balance in favor of high cost or low benefit states who can take advantage of the mechanism of reciprocity introduced by the Vienna Convention.

Under the reservations regime in force prior to the Vienna Convention, unanimity principles, rather than reciprocity principles, governed the effects of unilateral reservations at the time of treaty accession and ratification. Under such a regime, reservations become effective only if all other states give their consent. This prevents non-reserving states from being made worse off by unilateral reservations introduced by another signatory state at the time of ratification.

The biased effects of Article 21 never became a matter of open contention during several years of preparatory work that preceded development of rules on treaty reservations. The main argument for changing the existing reservation rules was based on the need for greater flexibility brought about by the increasing diffusion of multilateral treaties in world politics. Giving states greater flexibility in accepting the terms of a treaty would avoid undesirable holdups in the ratification process and ultimately foster greater state participation. On the other hand, states that opposed changes in the law of treaty reservations feared that any departure from the unanimity principle would contradict past practice and run the risk of casting a shadow of ambiguity over treaty language.²⁹ In wrestling with this problem, the U.N. General Assembly asked the International Court of Justice to offer its guidance on the question of reservations, and also turned to the International Law Commission for its expertise.³⁰ Neither of these official opinions indicates an explicit awareness of the biased effects of the reciprocity principle.

In spite of the lack of open discussion of this matter, it is interesting to look back at the peculiar split between supporters and opponents of Article 21 in light of our findings. Reciprocity under Article 21 was strongly advocated by less developed countries, such as India and other non-European countries, and opposed by more established European nations and the United States.³¹

This paper has identified the source of the bias in the unequal opportunity to introduce reservations. When a treaty does not correspond to the state's private optimum, different groups of states have different types of options. If a high cost state wishes to avoid application of a given treaty provision, or to reduce the content of the treaty obligation under such a provision, it has the opportunity to do so via unilateral reservations. The reciprocal effects of reservations

²⁹ The General Assembly asked the International Law Commission to "study the question of reservations to multilateral conventions both from the point of view of codification and from that of progressive development (resolution 478 (V) of 16 November 1950). See also *Report of the International Law Commission on the work of its forty ninth session 12 May 18 July* U.N. GAOR, 52nd Sess., Supp. No. 10, U.N. Doc. A/52/10 (1997) discussed in Parisi and Sevcenko (2002).

³⁰ Even after the Court rendered its opinion, the ILC input still was relevant because the Court, relying on the abstract nature of an advisory opinion, left many questions unanswered about how a regime would work that did not require unanimous acceptance of reservations.

³¹ The debate that followed India's request for accession to the Inter-Governmental Maritime Organization is informative of the positions taken by the various nations on the general issue of reservations. Documentation is available at GAOR, 14th session, annexes, a.i. 65 (1959). Position of India is described in A/4188 and that of the Secretary General in A/4235. Rosenne (1989) suggests that the fall of the unanimity rule and allowance of reservations is a product of the demise of European dominance in international relations. The United States ultimately failed to ratify the Vienna Convention on the law of treaties. In practice the United States closely scrutinizes reservation provisions prior to signing a multilateral treaty, to avoid applicability of other default mechanisms of reservation.

transform a unilateral reservation into a bilateral change in treaty content. No symmetric opportunity is given to low cost states to add provisions to a treaty via reservations or to raise the content of a treaty obligation under an existing provision. Weaker or high-cost states thus have an intrinsic advantage over stronger or low-cost states in shaping the content of multilateral treaty relations.

Further research should examine the applicability of these results to other situations where reciprocity constrains the strategic behavior of different parties (e.g., most favored nation clauses, etc.), and should consider different alternative mechanisms that may avoid the identified limitations of Article 21 of the Vienna Convention.

References

- Brownlie, I. (1990). *Principles of Public International Law*. 4th ed., Oxford: Clarendon Press.
- Fon, V. and Parisi, F. (2003a), Reciprocity-Induced Cooperation. *Journal of Institutional and Theoretical Economics* 159: 1-17.
- Fon, V. and Parisi, F. (2003b), The Limits of Reciprocity for Social Cooperation. *George Mason University, Law and Economics Working Paper Series* 03-08.
- Gamble, J.K. (1980), Reservations to Multilateral Treaties: a Macroscopic View of State Practice, *American Journal of International Law* 74: 372.
- Grieg, D.W. (1994), Reciprocity, Proportionality, and the Law of Treaties, *Virginia Journal of International Law* 34: 295.
- Hylton, D.N. (1994), Default Breakdown: The Vienna Convention on the Law of Treaties: Inadequate Framework on Reservations, *Vanderbilt Journal of Transnational Law* 27: 419.
- Kearney, R.D. and Dalton R.E. (1970), The Treaty on Treaties, *American Journal of International Law*. 64: 495.
- Kontou, Nancy (1994), *The Termination and Revision of Treaties in the Light of New Customary International Law*. Oxford: Clarendon Press.
- Malkin, W. (1926), Reservations to Multilateral Conventions. *British Yearbook of International Law* 7: 141-162.
- Parisi, F. (1998). Customary Law. *The New Palgrave Dictionary of Economics and the Law* 572-578 (Macmillan).
- Parisi, F. and Ghei, N. (2003). The Role of Reciprocity in International Law, *Cornell International Law Journal* __-__.
- Parisi, F. and Sevchenko, C. (2003). Treaty Reservations and the Economics of Article 21 of the Vienna Convention, *Berkeley Journal of International Law* 21: 100-126.
- Rosenne, Shabtai (1989), *Developments in the Law of Treaties 1945 – 1986*. Cambridge, U.K.: Cambridge University Press.
- Sinclair, I. (1984), *The Vienna Convention on the Law of Treaties* (2d ed.). Manchester, U.K.: Manchester University Press.